

CLAIMS

1. A method for purifying waste water using microorganisms, preferably originating from an integrated stock farming system, which method comprises supplying waste water to a non-aerated section of a biological waste water purification plant, supplying the effluent of said non-aerated
5 section to an aerated section, recirculating at least the greater part of the microorganisms and at least a part of the effluent of the aerated section to the aerated and/or the non-aerated section, and separating at least a part of the microorganisms using a membrane filtration, the content of micro-organisms in the waste-water purification being preferably above 10 g/l.
- 10 2. A method according to claim 1, wherein the microorganism-containing effluent is split by means of a membrane into a microorganism-enriched stream to be largely recirculated and a stream substantially free of microorganisms.
3. A method according to claim 1, wherein microorganism-containing
15 effluent of the aerated section is split into a microorganism-enriched stream to be largely recirculated and a stream reduced in microorganisms via a pre-separator and membrane filtration.
4. A method according to claims 1-3, wherein at least a flat membrane is used, and behind the membrane a reduced pressure prevails.
- 20 5. A method according to claims 1-4, wherein at least a part of the biomass is used for washing contaminated air originating from a stable for intensive stock farming.
6. A method according to claims 1-5, wherein salt-containing purified waste water, after separation of the biomass and optional separation of
25 other contaminants and/or concentration, is used for drying and/or decontamination of contaminated air originating from a stable for intensive stock farming.

7. A method according to claims 1-5, wherein salt-containing purified waste water, after separation of the biomass and optional separation of other contaminants and/or concentration, is electrolytically treated, thereby splitting the salt into acid and base.
- 5 8. A method according to claims 1-7, wherein heat originating from the waste-water purification is used for drying materials.
9. Apparatus for purifying waste water utilizing the method according to any one of claims 1-8, comprising a biological waste water purification plant with a non-aerated section and an aerated section, means for
- 10 recirculating at least the greater part of the microorganisms and at least a part of the effluent of the aerated section to the aerated and/or the non-aerated section, and means for separating at least a part of the effluent with the aid of a membrane filtration.
10. Apparatus according to claim 9, comprising at least a stable for
- 15 keeping cattle, with means being present for substantially preventing the formation of ammonia through contact of solid manure and urine by separation into a solid and a liquid phase, which liquid phase is supplied to the non-aerated section of the waste-water purification plant, which system further comprises means for the at least partial reprocessing of the solid
- 20 and/or the liquid phase into useful products.
11. A system according to claim 10, wherein said means for substantially preventing the formation of ammonia consist of a separation system for separating solid components and liquid components, which separation system is arranged under the compartment for the animals or outside the
- 25 stable.
12. A system according to claim 11, wherein said separation system consists of a plastic conveyor belt, whose central axis is higher than at least one of the sides, so that the liquid runs off laterally, while further a collecting drain is present for collecting and discharging the liquid.

13. A system according to claim 11, wherein the means consist of a rotor separator, a screening bend, or a screw separator.

14. A system according to claims 9-13, wherein in the waste-water purification one or more tubes are arranged through which the material to
5 be dried can be conveyed, which material is dried by heat exchange with the hot waste water.

15. A system according to claims 9-15, wherein the solid phase is further processed by fermentation and/or combustion and/or gasification, optionally combined with rendering the residue products inert by glazing/glass
10 foaming.

16. A system according to claims 9-15, wherein one or more product streams, such as algae, duckweed, biomass and/or solid composted manure, optionally in combination with other components, are used as feed.

17. A system according to claim 16, wherein solid manure components,
15 whether or not after pretreatment (fermenting, composting, mineralizing), are mixed with glass powder and optionally other additives, which mixture is subsequently converted into porous glass granules.

18. A system according to claims 9-17, wherein the stable is implemented as a conventional system or a modular system of boxlike modules with
20 mobile receiving module.